GOVERNMENT OF INDIA
AGRICULTURE
LOK SABHA

UNSTARRED QUESTION NO:3137
ANSWERED ON:15.03.2000
FIRST RUST GENE IDENTIFIED
CHINTAMAN NAVSHA WANAGA

Will the Minister of AGRICULTURE be pleased to state:

(a) whether the attention of the Government has been drawn to the news-item captioned `Asia`s first Rust gene identified in Punjab` appearing in the Indian Express, dated February 28, 2000;

(b) if so, matter of the facts reported therein;

(c) whether due to rust disease large quantity of wheat is damaged: and

(d) if so, the steps taken by Government to eradicate this disease?

Answer

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE

(SHRI HUKUMDEO NARAYAN YADAV)

(a) Yes, Sir.

(b) The News item appeared in the Indian Express is perhaps based on a presentation by Dr. R.G. Saini, Professor of Genetics, Punjab Agricultural University (PAU), Ludhiana in a National Symposium (Session VI) on `Role of Resistance in Intensive Agriculture` held at Directorate of Wheat Research (DWR), Karnal on February 17, 2000.

So far, 47 leaf rust resistance genes have been identified and listed in the `Catalogue of gene symbols of wheat`. All these designations were reported on the basis of research carried out in Canada, USA, Australia and CIMMYT (Mexico).

Two new genes i.e. Lr 48 and Lr 49 were identified as new adult plant leaf rust resistance genes from cultivars CSP 44 and VL404 respectively from India (Asia). The identification of these genes is the result of research work carried over a period of 17 years which has been jointly carried out by the Scientists at PAU, Ludhiana and DWR (ICAR)Regional Station at Shimla.

The rust disease can be checked through deployment of new genes. However, the pathogens can always evolve new races to match these genes. The variety developed through deployment of resistant genes continue to remain resistant till new races of the pathogen are evolved.

(c) & (d): Due to rust disease, a large quantity of wheat is not damaged per annum. However, a well targeted disease management strategy is followed through a very organized and systematic approach under the All India Coordinated Wheat Improvement Project (AICWIP), due to which India has the distinction of not having any serious disease epidemic for the last several years. The steps being taken are as follows:

Resistant Varieties are developed through transfer of resistant genes into suitable genetic background by the Scientists of different ICAR Institutes/SAUs in the country.They are subjected to rigorous evaluation against rust disease by the Crop Protection Programme of the AICWIP at multilocations under hot spot and artificially inoculated conditions.Only the material with improved agronomical characters and a high level of resistance to rust diseases are identified and recommended for cultivation.

Rusts are effectively managed through the deployment of rust resistant genes in different epidemiological zones in the country. It is a centrally planned properly executed strategic use of useful resistance genes over a large geographical tract to minimize the risk of epidemics of rust diseases.

Survey and surveillance programme keeps the scientists informed about the appearance of diseases, appearance of new pathotypes or races. A constant vigil is kept on crop through roving surveys and planting of Trap Plot Nurseries at multilocations.